

Patent Claims

1. A method for monitoring a rotation rate sensor
with a vibrational gyroscope
 - 5 - which has a first input and a first output
which form part of a primary control loop which
excites the vibrational gyroscope by supplying
an excitation signal to the first input at its
natural frequency,
 - 10 - where the vibrational gyroscope also has a
second input and a second output which form
part of a secondary control loop,
 - where an output signal can be taken from the
second output, said output signal being
15 amplified and subjected to analog/digital
conversion and then demodulated into an inphase
component and a quadrature component,
 - where the components are filtered and are then
modulated again and compiled to form a driver
20 signal which is supplied to the second input,
and
 - where a rotation rate signal is derived from
the inphase component,
characterized
 - 25 - in that the inphase component and the
quadrature component have a test signal added
to them whose frequency brings about sidebands
which are situated in the driver signal outside
of the second control loop's passband,
 - 30 - in that the respective test signal which is
present in the inphase component and in the
quadrature component after passing through the
control loop is monitored, and
 - in that an error message is output if the
35 amplitude is below a prescribed threshold
value.
2. The method as claimed in claim 1, characterized in
that measurement signals are taken from the

components prior to the addition of the test signal and are synchronously demodulated.

- 5 3. The method as claimed in claim 2, characterized in that the measurement signals from both components are respectively monitored for their amplitude, for the ratio of the amplitudes and/or for their phase.
- 10 4. The method as claimed in either of claims 2 and 3, characterized in that measurement signals are derived before and after the components are filtered.
- 15 5 The method as claimed in one of claims 2 to 4, characterized in that the synchronously demodulated measurement signals are integrated over a prescribed time, and in that the value of the integral is compared with the prescribed threshold value.
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- 25 6. The method as claimed in one of claims 2 to 4, characterized in that the synchronously demodulated measurement signals are integrated, and in that the time before the integrated measurement signals reach a prescribed threshold value is measured.
- 30 7. The method as claimed in one of the preceding claims, characterized in that the modulation signal has a frequency of 200 Hz.